1 STANDING COMMITTEE ON ENERGY (1996-97)

ELEVENTH LOK SABHA

96-97

DEPARTMENT OF ATOMIC ENERGY

DEMANDS FOR GRANTS (1996-97)

FIRST REPORT

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LOK SABHA SECRETARIAT
NEW DELHI

August, 1996/Bhadra, 1918 (Saka)

FIRST REPORT

STANDING COMMITTEE ON ENERGY (1996-97)

(ELEVENTH LOK SABHA)

DEPARTMENT OF ATOMIC ENERGY DEMANDS FOR GRANTS (1996-97)

Presented to Lok Sabha on ....3.....SEP 1996

Laid in Rajya Sabha on .....

LOK SABHA SECRETARIAT
NEW DELHI

August, 1996/Bhadra, 1918 (Saka)

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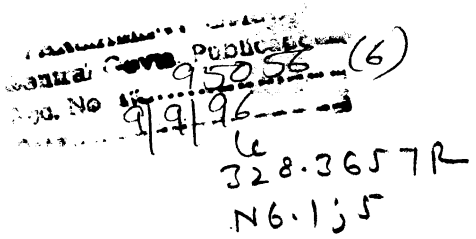

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1	Para 1.2	1	corers	crores
5	Clm. 11	2	investments Power	investments in Power
8	Para 1.11	4	Rs. 476.37 crores	Rs. 496.37 crores
8	-do-	10	Committee also,	Committee also
18	Para 1.38	2	in over	over
22	Sl. No. 1/ Para 1.10	4	begining	beginning
22	Sl. No. 1/ Para 1.11	6	during 1995	during 1995-96
22	-do-	7	Rs. 476.37 crores	Rs. 496.37 crores
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COMPOSITION OF THE STANDING COMMITTEE ON ENERGY
(1996-97)

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INTRODUCTION

I, the Chairman, Standing Committee on Energy having been authorised by the Committee to present the Report on their behalf, present this First Report on the Demands for Grants (1996-97) relating to the Department of Atomic Energy.

2. The Committee took evidence of the representatives of the Department of Atomic Energy on 13th August, 1996.

3. The Committee wish to thank the representatives of Department of Atomic Energy who appeared before the Committee and placed their considered views. They also wish to thank the Department for furnishing the replies on the points raised by the Committee.

4. The Report was considered and adopted by the Committee at their sitting held on 21st August, 1996.

NEW DELHI;
27th August, 1996
5 Bhadra, 1918 (Saka)

JAGMOHAN,
Chairman,
Standing Committee on Energy.

PART I

ANALYSIS OF DEMANDS FOR GRANTS AND PLAN BUDGET OF THE DEPARTMENT OF ATOMIC ENERGY

The following two Demands for Grants have been submitted to Parliament by the Department of Atomic Energy (DAE) for the year 1996-97:—

Demand No. 87

Relating to Secretariat — Revenue and Capital Expenditure on Atomic Energy Research and Development and Industrial Projects Rs. 1217. 25 Crores.

Demand No. 88

Relating to Revenue and Capital Expenditure on Nuclear Power Schemes Rs. 881.35 Crores.

1.2 The two Demands aggregating to Rs. 2098.60 corers comprise of Rs. 647.00 crores for Plan schemes and 1451.60 crores for Non Plan expenditure. In addition, Plan schemes to an extent of Rs. 695.00 crores are to be met from Internal and Extra Budgetary Resources.

1.3 The details of actual revenue and capital expenditure for the year 1994-95, the Budget and Revised Estimates for 1995-96 and Budget Estimates for 1996-97 of the Department are as under:—

(Rs. in Crores)

Sl.No.	Major Heads	1994-95 Actuals		1995-96 B.E.		1995-96 R.E.		1996-97 B.E.		Remarks
		Plan	Non-Plan	Plan	Non-Plan	Plan	Non-Plan	Plan	Non-Plan	
1	2	3	4	5	6	7	8	9	10	11
Demand No. 87										
Revenue Section										
1.	3451	—	5.03	—	5.18	—	5.18	—	5.43	This head comprises items like salaries etc. of Sectt. & Atomic Energy Commission.
2.	2852	5.00	194.71	3.00	215.77	3.00	210.31	4.00	217.26	This head comprises items like Bhabha Atomic Research Centre, Nuclear Fuel Complex, Fuel Reprocessing Plants,

										Industry & Extension programme and Support Services.
3.	3401	44.88	305.86	55.47	311.96	53.11	333.44	54.90	335.30	This head comprises items like R&D expenditure of Bhabha Atomic Research Centre, Aided Institutions, IGCAR, CAT, contribtion to International Atomic Energy Agency.
Capital Section										
4.	4425	—	—	—	0.01	—	0.01	—	0.01	This head comprises items like investment in co-operative societies/canteens.
5.	4859	1.00	—	1.00	—	1.00	—	1.00	—	This head comprises items like investment in Electronics Corporation of India Ltd.
6.	4861	137.31	339.25	175.99	379.06	120.31	362.50	125.73	362.18	This head comprises items like Bhabha Atomic Research Centre, Nuclear Fuel Complex,

1	2	3	4	5	6	7	8	9	10	11
										Heavy Water Board, Fuel Reprocessing industry & Extension programme.
7.	5401	96.95	—	109.53	—	105.93	—	110.10	—	This head comprises items like Bhabha Atomic Research Centre, IGCAR, VECC, CAT.
8.	6859	1.00	—	1.00	—	1.00	—	1.00	—	This head comprises items like loan to Electronics Corporation of India Ltd.
9.	7475	—	0.20	—	0.14	—	0.25	—	0.25	This head comprises items like loans to co-operative Societies.
	Demand No. 88 Revenue Section									
10.	2801	—	367.09	—	516.01	—	503.64	—531.11		This head comprises items like Power Project Fuel Inventory and Waste Mangement.

Capital Section

11.	4801	199.97	—	300.00	—	286.61	—	350.24	—	This head comprises items like investments Power Projects.

Demand No. 87

Adjustment of Recoveries as reduction of expenditure.
Revenue Section

12.	2852	(-) 5.00	(-) 2.16	(-) 3.00	(-) 1.33	(-) 3.00	(-) 1.33	(-) 4.00	(-) 1.20
13.	3401	—	(-) 1.90	—	(-) 3.71	—	(-) 5.87	—	(-) 3.72

Capital Section

14.	4861	—	(-)8.03	—	(-) 67.91	—	(-) 54.87	—	(-) 62.18

I. Budgetary Provisions

1.4 The Budget Provisions of Department of Atomic Energy in respect of the years 1994-95, 1995-96 and 1996-97 are as under:—

(Rs. in Crores)

	1994-95				1995-96		1995-96		1996-97	
	B.E.		R.E.		B.E.		Actuals (Provisional)		B.E.	
	Plan	Non-Plan	Plan	Non-Plan	Plan	Non-Plan	Plan	Non-Plan	Plan	Non Plan
Budgetary Support	530	1439	500	1282	646	1428	554	1406	647	1452
IEBR	1042	-	679	-	887	-	592	-	695	-
Total	1572	1439	1179	1282	1533	1428	1146	1406	1342	1452

IEBR— Internal and Extra Budgetary Resources.

1.5 The Plan expenditure of the Department has been much less than the budgeted amount during 1994-95 as well as 1995-96. Whereas the Revised Estimates in respect of Plan expenditure for the year 1994-95 indicate an expenditure of Rs. 1179 crores as against the target of Rs. 1572 crores, for the year 1995-96, the actual plan expenditure (Provisional) has been shown to be Rs. 1146 crores as against the estimated expenditure of Rs. 1533 crores. The shortfall in the Plan expenditure of the Department has obviously been due to non-realisation of the envisaged Internal and Extra Budgetary Resources.

1.6 The Department was asked to specify the actual IEBR generated during 1994-95 and 1995-96 to meet the plan expenditure. The Department furnished the undermentioned information in a written reply:—

(Rs. in Crores)

Sector	1994-95	1995-96
I& M Sector (Industries & Minerals Sector)	60.95	18.37
Power Sector	225.95	478.37
Total	286.90	496.37

1.7 When asked to furnish the reasons for the inability to generate the originally envisaged Internal and Extra Budgetary Resources which resulted in a severe set back in the plan expenditure, the Department, in a written reply stated as under:—

> "The low operating base of 1940 MWe of Nuclear Power Corporation of India Ltd. does not provide adequate flexibility to generate internal surpluses as 9,000 MW (e) base is required for generating adequate internal surpluses. One of the main reasons for shortfall in mobilization of IEBR through internal generation was on account of there being no internal surpluses in the previous years. As regards external borrowings, the extreme tight conditions prevailing in the capital market inhibited the mobilization of borrowings and bonds could be issued only to a limited extent."

1.8 During oral evidence, the Committee enquired about the feasibility of the measure of generating internal and extra budgetary resources to finance the programmes of the Department. In this regard, Shri Y.S.R. Prasad, Member, AEC and MD, NPC stated:—

> ".... It is not easy to get the large amount of money from outside. Another problem we faced is due to short-term loans for five or six years in the form of bonds. The construction of the plant itself takes eight years. The money for the base industries, not only in India but even in foreign countries, comes as long-term loan facilities. Even the NTPC gets long-terms loans, say for 20 years or 25 years. We got the loans from the market only for five to six years. So, it has become a very difficult situation."

1.9 Emphasising on the need for long term loan facilities to finance the programmes of the Department. Shri Prasad also added during evidence:—

> " Basically Nuclear Power Corporation does not get any loan from any other place like N.T.P.C. and others like from World Bank etc. It is because the other developed countries want to maintain the technology control regime. We have to depend on our own resources and because of that, as applicable to the other base industries, it is very essential that we should also have long-term loan facility available to us."

1.10. The Committee, in their Ninth and Twenty Third Reports on Demands for Grants of the Department for the years 1994-95 and 1995-96 respectively, had noted with concern that, since the beginning of the Plan period the Plan expenditure of the Department had been short of the budgeted amount. It was seen that the shortfall had been due to the inability of the Department to

raise internal and extra budgetary resources even though such a target had been envisaged. The Committee had, therefore, stressed on the need of making a realistic budget estimate so as to avoid setbacks to the Plan activities of the Department.

1.11 From the figures relating to actual mobilisation of IEBR to meet the plan expenditure, the Committee observe that during 1994-95 the mobilisation of funds under IEBR was only Rs. 286.90 crores as against the initially envisaged amount of Rs. 1042.00 crores and during 1995-96 Rs. 476.37 crores as against the initially envisaged amount of Rs. 887.00 crores. The Committee note that the IEBR envisaged to meet the Plan expenditure of the Department has been fixed at unrealistic level. Considering the low operating base of the installed nuclear capacity to generate sufficient internal resources to finance the Plan Programmes, the Committee are of the opinion that it is essential to bring down the estimates of IEBR to realistic levels. The Committee also, strongly recommend that the Budgetary Support to the Department be enhanced to a level which would enable the establishment of a base capacity to generate sufficient internal resources.

1.12 In view of the low operating base of the installed nuclear capacity to generate sufficient resources to support the Programmes of the Department and the gestation period involved in setting up of Nuclear Power Plants, the Committee emphasise that financing Schemes need to be evolved to suit the specific requirements of the Nuclear Power Programme. Considering that setting up of a Nuclear Power Plant takes about eight years, the Committee feel that raising funds through short terms loans for financing the programmes would not be feasible. The Committee, therefore, stress that the Department should be provided with long term credit facilities to finance its programmes effectively.

II. Sector-wise outlay for the Eighth Five Year Plan

1.13 The outlays of Department of Atomic Energy are formulated under three major sectors *viz*., Research & Development Sector, Industries and Minerals Sector and Power Sector. The Research and Development Sector of Department of Atomic Energy provides the research and support for nuclear power programme and also covers basic research in frontier areas of Science and Technology. The Power Sector deals with construction and operation of Nuclear Power Plants and related ancillary activities. The Industries and Minerals Sector (I & M) deals with activities related to Nuclear fuel cycle and is closely linked to Nuclear power programme by meeting the needs of Heavy water, Nuclear fuel, Reprocessing plants etc.

1.14 The Sector wise Plan outlay for the Eighth Plan (1992-97) and the year-wise estimated and actual plan expenditure are given below:

(Rs. in crores)

	VIII Plan 92-97	B.E. 92-93	Actuals 92-93	B.E. 93-94	Actuals 93-94	B.E. 94-95	Actuals 94-95	BE. 95-96	R.E 95-96	B.E 96-97
I. R&D Sector	600	105	84	118	100	125	139	165	159	165
II. I & M Sector	1300	207	147	242	150	264	167	216	163	176
III. Power Sector	4261	966	740	960	680	1183	783	1152	841	1000

1.15 A glance at the above table reveals that in case of the R & D sector where the outlays are solely by way of Budgetary Resources, except during the year 1994-95, the actual Annual Plan expenditure has been less than the estimated amount. In the I & M Sector, the projected Plan expenditure for the 8th Plan Period is less than the approved Plan outlay by as much as Rs. 500 crores. And, in the Power Sector, the Plan expenditure would be significantly lower than the outlay for the Eighth Plan.

(a) R&D Sector

1.16 With specific reference to some of the units in the R&D Sector, *viz*. Atomic Minerals Division and Variable Energy Cyclotron Centre, the actual utilisation of Plan outlays has been as under :

(Rs. in Crores)

	VIII Plan outlay	B.E. 92-93	Actuals 92-93	B.E. 93-94	Actuals 93-94	B.E. 94-95	Actuals 94-95	BE. 95-96	R.E 95-96	B.E 96-97
(i) Variable Energy Cyclotron Centre (VECC)	21.36	1.50	1.39	2.00	1.61	3.50	2.07	6.00	5.00	6.00
(ii) Atomic Minerals Division (AMD)	30.00	8.50	4.82	7.00	5.38	5.00	3.40	4.00	4.00	4.00

1.17 When asked to specify the reasons for the shortfall in utilisation of approved annual plan outlays in the R & D Sector as a whole, and the significant shortfall in the outlays for Variable Energy Cyclotron Centre (VECC) and Atomic Minerals Division (AMD) the Department, in a written reply, *inter-alia* stated as under:

> "In case of Variable Energy Cyclotron Centre, the slower progress in utilisation of plan outlays was due mainly to difficulties in procurement of some key equipment like Helium liquefier, Liquid Nitrogen tank etc. As regards the reasons for the shortfall of Atomic Minerals Division, these are attributed to the rephasing of the Power programme and consequent slowing down of uranium mining and milling. In 1992-93, it was decided to explore for ore grade of 0.06% of U 3 o 8 and above. Accordingly, drilling programme was reduced and exploration strategies were changed to look for concealed high grade deposits for which certain equipment were needed to be imported. Funds could not be utlised due to delay in getting equipment costing more than Rs. 4 crores due to technology control regime."

(b) I & M Sector:

1.18 On the reasons for the likely shortfall in expenditure of as much as Rs. 500 Crores in the Eighth Plan Outlay for the I & M Sector, the Department, in a written reply stated that the shortfall was owing to rephasing of the Fuel Fabrication Facilities of the Nuclear Fuel complex; rephasing and revision in the scope of Uranium mining and milling project of UCIL; and rephasing of Fuel Cycle Facili-

ties of BARC. The Department has stated that these factors are directly attributable to the scaling down of the nuclear power programme on account of budgetary resource constraints and other physical impediments.

(c) Power Sector:

1.19 When questioned about the financial and other implications of the major projects in the power sector which would be spilling over the Ninth Plan period as a consequence of the poor plan performance of the Power Sector, the Department, in a written reply stated that, 'Kaiga 1 & 2 and RAP 3 & 4 will be spilling over to the IX Plan'. The Department has also stated that the delay in execution of the projects is mainly due to the I.C. dome delamination incident at Kaiga-1 and resultant hold up in the civil construction work at the above mentioned projects. Outlays of Rs. 633 crores for Kaiga 1 & 2 and Rs. 680 crore for RAP 3 & 4 respectively are being proposed for inclusion in the IX Plan.

1.20 On the remedial measures undertaken to overcome the delay caused in the execution of the Kaiga project as a result of the dome delamination incident which occurred two years ago, the Department, in a written reply, *inter-alia*, stated as under:

> "The re-engineering of Kaiga Dome has been a very elaborate exercise requiring an in-depth examination of all factors and considering the importance given to safety issues, the time taken in undertaking remedial measures could not have been avoided."

1.21 The Department also informed that a new Design Basis Report and procedures were submitted to Atomic Energy Regulatory Board for clearance.

1.22 In this regard, Shri Y. S. R. Prasad, MD, NPC and Member, AEC stated during evidence that a modified design was evolved taking into consideration both 'design and procedural issues.' Shri Prasad also stated that the construction of Rajashtan units III and IV was not proceeded with as these units were identical to Kaiga Unit -I.

1.23 The Committee observe that in case of the R&D Sector where the Plan outlay is solely by way of budgetary resources, there have been shortfalls in utilisation of the approved annual plan outlays except during the year 1994-95. The Plan expenditure incurred in case of Variable Energy Cyclotron Centre (VECC) and Atomic Minerals Division (AMD) have been significantly lower than the approved annual outlays for the units. Whereas the shortfall in utilisation of Plan outlays by VECC has been stated to be owing to the difficulties in the procurement of some key equipment, in the case of AMD, the shortfall has been attributed to the rephasing of the power programme and the conse-

quent slowing down of Uranium mining and milling. The Committee expect that the factors attributing to the shortfall in plan expenditure would be examined in detail and corrective action undertaken to make realistic estimates for the units in future.

1.24 The Committee note with concern that the shortfall in utilisation of the Eighth Plan outlay for the I & M Sector is likely to be more than Rs.500 Crores. The shortfall in Plan expenditure has been attributed to the rephasing of the Fuel Fabrication facilities of NFC; rephasing of the Uranium mining and milling Project of UCIL; and rephasing of Fuel Cycle facilities of BA RC, all of which have been stated to be owing to the scaling down of the Nuclear Power programme. The shortfall in utilisation of the outlays being noticeable since the very first year of the Plan Period, the Committee fail to understand as to why the factors attributing to the same were not taken into consideration at the stage of formulation of the annual outlays in the subsequent years of the Plan Period. The Committee express the hope that the situation would improve in future.

1.25 On the financial and other implications of the major Projects in Power Sector which would be spilling over to the Ninth Plan Period, the Department has stated that Kaiga units 1 & 2 and RAPP 3 & 4 would be spilling over to the Ninth Plan Period. The delay in execution of the Projects has been stated to be mainly due to the I . C. dome delamination incident which occurred at Kaiga-I two years ago. The Committee note that the Kaiga incident has resulted in a hold up in the execution of RAPP 3 & 4. Considering that the delay in execution of the Projects contributes to cost overruns and also results in a loss to the economy by way of Power generation, the Committee express the hope that undertaking of remedial measures would be completed at the earliest. The Committee would like to be apprised of the developments in this regard.

III. Atomic Minerals Division (AMD)

1.26 The Atomic Minerals Division is engaged in radiometric and geological surveys, exploration, prospecting and development of various mineral resources needed for the Nuclear Power Programme. The allocation and utilisation of Budgetary Resources for AMD for the years 1993-94 to 1995-96 and the Budget estimates for 1996-97 are as under:

(Rs. in Crores)

1993-94		Shortfall(+)	1994-95		Shortfall(+)	1995-96		Shortfall(+)	1996-97
B. E.	Actuals	Excess(-)	B. E.	Actuals	Excess(-)	B. E.	Actuals	Excess(-)	B. E.
31.32	27.83	(-)3.49	30.09	27.86	(-)2.23	29.22	28.44	(-)0.78	30.16

1.27 The targets and achievements in respect of some of the Principal Activities of AMD during 1995-96 and the targets for 1996-97 are as shown below:

	1995-96		1996-97
	Target	Achievements	Target
Airborne Survey Fixed Wing (L Km)	40,000	21,494	20,000
Geochemical Investigations	20,550	20,219	15,245
Geophysical Surveys Regional (Sq.Km.)	175	156	50
Heavy Mineral Investigations	130	195	55
RS(L Km)	130	195	55
DS (L Km)	20	2	25

1.28 On the reasons for the inability to meet the targets envisaged for the year 1995-96, the Department has, in a written reply, stated that 'the targets for airborne surveys could not be met due to non-availability of private aircraft in the months of November and December 1995'. The shortfall in geophysical surveys has been attributed to logistical problem and frequent breakdown of vehicular

support as the survey is done in remote areas. Further, the shortfall in the target of detailed survey under heavy mineral investigations has been stated to have been compensated in the regional survey under the same head.

1.29 The Committee observe that there has been a shortfall in the utilisation of Budgetary allocations by AMD over the years. The Committee find that during 1995-96, there had been shortfalls in the utilisation of Budgetary outlays as well as in the achievement of targets in respect of some of the principal activities of AMD. The shortfall in meeting the targets for airborne survey is to the extent of nearly fifty percent during the year. The Committee do not find the reasons advanced for the same as convincing. The Committee hope that the reasons for the shortfalls in utilisation of Budgetary allocation as well as the targets envisaged for the activities would be analysed in detail and the performance of AMD improved in future.

IV. Nuclear Fuel Complex (NFC)

1.30 Nuclear Fuel Complex fabricates and supplies fuel for the Nuclear Power Reactors. It also fabricates Thorium Oxide Blankets for the FBTR at Kalpakkam. NFC operates plants for production of ceramic grade Uranium Oxide, Zircalloy components, sintered pellets and fuel assemblies.

1.31 The allocation and utilisation of resources for Nuclear Fuel Complex are as under:

(Rs. in Crores)

		1993-94		1994-95		1995-96		1996-97
UNITS/PROGRAMME		B.E.	ACTUALS	B.E.	ACTUALS	B.E.	ACTUALS	B.E.
1. Operational Expenses of Fuel Plant	NP	154.30	124.64	131.46	114	133	129.22	130.13
2. Operational Expenses of Stainless Steel Seamless Tubes Plants	NP	6.50	3.66	4.81	3.05	4.60	4.42	3.27
3. Operational Expenses of Ball Bearing Steel Tubes Plant	NP	4.44	3.21	3.70	2.96	3.40	2.95	3.00
4. Estate Management, Hyderabed	NP	1.50	1.45	1.68	1.50	1.65	1.55	1.66
5. Grant-in-aid	NP	1.20	1.18	1.35	1.20	1.40	1.37	1.44
6. Department Canteen	NP	0.00	0.00	0.00	0.00	.46	.46	.50
7. Fuel Fabrication Facilities and Others	P	100.00	33.22	100.00	38.55	70.00	45.07	53.00
	P	100.00	33.23	100.00	38.54	70.00	45.07	53.00
	NP	167.94	134.16	143.00	122.83	144.43	139.97	140.00
Total : NFC		268.00	167.39	243.00	161.38	214.43	185.05	193.00

1.32 The utilisation of Budgetary allocations by NFC during the year 1993-94 was only Rs. 167.39 crores as against the estimated amount of Rs. 268.00 crores. The under utilisation of Budgetary allocations during the year was to the extent of Rs. 101 Crores. Similarly, the utilisation of Budgetary allocations by NFC during 1994-95 was only Rs. 161.38 crores as against the envisaged amount of Rs. 243.00 crores. And, during the year 1995-96, the utilisation has been Rs. 185 crores as against Rs. 214.43 crores initially estimated. The shortfall in utilisation of resources during the two years has been to the extent of Rs. 82 crores and Rs. 29 crores, respectively.

1.33 When asked to specify the reasons for the poor budgetary performance of NFC over the years, the Department, in a written reply, *inter alia* stated that owing to the scaling down of the nuclear power programme, in the year 1992-93, the original sanction for the new projects in NFC was reduced to Rs. 355 crores, a figure which was estimated by assessing that a good number of equipment would be imported in order to complete the projects quickly. The Department stated that the imported price of these machines being high, budget provisions of the order of Rs. 100 crores each were made during 1993-94 and 1994-95. However, owing to scaled down requirements of the nuclear power programme and the corresponding less urgency in the requirement of fuel, indigenous efforts were made to manufacture the machines as a result of which the project cost was brought down from Rs. 355 crores to Rs. 215 crores. Continuation of efforts to reduce the cost by replacing the imported components by indigenised components has resulted in lower utilisation of funds in the initial years of the VIII Plan.

1.34 Speaking on the programme of fabricating the machinery indigenously as a consequence of the scaling down of the Nuclear Power Programme, Shri K. K. Sinha, Chief Executive, NFC stated during evidence:

> "This has been a very successful exercise for the expansion of nuclear fuel that is going on. We were supposed to spend Rs. 350 crores. Against that, we will be spending only Rs. 215 crores. That means, Rs. 135 crores of Government money we are saving by designing and fabricating in house. We have taken advantage of slightly slowing down of programme. I am not happy about it. This is also one of the reason for surrendering the funds."

1.35 The Committee, in their Twenty Third Report on Demands for Grants (1995-96) had highlighted the disturbing aspect of shortfalls in utilisation of Budgetary allocations by NFC. The Committee observe that the shortfall in utilisation of the outlays by NFC was of the order of Rs. 101 crores during 1993-94, Rs. 82 crores in 1994-95 and Rs. 29 crores during 1995-96. The reasons for

the shortfall in utilisation of funds has been attributed to the reduction in the amount sanctioned for the new Projects in NFC and the subsequent efforts to fabricate the required machinery for the Projects indigenously. Manufacturing of the fuel fabricating equipment indigenously has been stated to have brought down the Project Costs from Rs. 355 crores to Rs. 215 crores owing to which funds from the approved outlays were surrendered. The Committee, while appreciating the indigenisation efforts which have contributed to bringing down the Project costs, express the hope that efforts would be made to ensure that the variation in the Budgetary estimates and actual expenditure in respect of the units/programmes of NFC which has been of a high order in the previous years would be brought down to a minimal level.

V. Nuclear Power Generation

1.36 The performance for the operating Atomic Power Stations in generating Power during 1994-95 and 1995-96 has been indicated below:

(Rs. in Crores)

Atomic Power Station	1994-95				1995-96			
	Gross Generation		Capacity factor %		Gross Generation		Capapcity factor %	
	Budgeted	Actual	Budgeted Mus	Actual	Budgeted	Provisional	Budgeted Mus	Provisional
Tarapur	1770	1517	63	54	1600	1553	57	55
Madras	1900	2432	49	66	1950	1410	63	36
Narora	2100	952	54	25	2368	2751	61	71
Kakrapur	1540	358	51	19	1933	1903	57	62

1.37 The generating capacity of the operating Atomic Power Stations has been well short of expectations. During 1994-95, the gross generation in respect of Tarapur, Narora and Kakrapur stations has been far lower than the targets envisaged. During 1995-96 too, the gross generation in respect of Tarapur, Madras and Kakrapur stations is expected to fall short of the Budgeted capacity.

1.38 When asked to specify the reasons for the low generating performance of most of the Power Stations in over the years, the Department, in a written reply, *inter-alia* has stated that, during 1994-95, the incident of fire at Narora Atomic Power Station on 31st March 93, resulted in damage to the plant as a consequence of which both the units at Narora had to take long shutdowns for rehabilitation and modifications. Inspection and modification to indigenous turbines at Madras Atomic Power Station (MAPS) and Kakrapar Atomic Power Station (KAPS) have been stated to have contributed to long 'outages ' of these units. Further, the performance of Unit-I of Tarapur Atomic Power Station (TAPS) has been stated to have been affected mainly due to extension of 13th refuelling outage on account of repair of by-pass line of recirculation loop and motor operated valve in shut down coling system. The Department has stated that during 1995-96, the Performance of TAPS-2 and MAPS-2 was affected as the units were scheduled to undertake mandatory inspection which took longer time than anticipated. The performance of Unit-2 of TAPS has also been stated to have been affected due to prolonged refuelling outage because of special work on 'core shroud inspection.'

1.39 The Department has also stated the performance of the BHEL turbo-generators and grid frequency variation have been affecting the performance of the Power Stations.

1.40 The Committee, in their Ninth and Twenty Third Reports on Demands for Grants for the years 1994-95 and 1995-96, had commented on the poor operating performance of some of the Power Stations. With a view to maintain a consistently good level of performance of the Stations, the Committee stress that corrective measures, required specifically for each unit, as well as those applicable to all the units need to be undertaken on the basis of a time bound programme.

VI. Regulatory aspects of safety

1.41 The Atomic Energy Regulatory Board (AERB) carries out regulatory and safety functions which include laying down and enforcing of radiation safety standards and monitoring nuclear installations in the country. In addition to enforcing nuclear safety and industrial safety in different units of the DAE, the Board enforces radiological safety in all the institutions that use radiation sources.

1.42 When enquired about the reported study carried out by AERB, which documented a number of safety issues in the nuclear installations under DAE which warrant urgent corrective action, the Department, in a Written reply, *inter-alia* stated:—

> "The Atomic Energy Regulatory Board (AERB) recently reviewed the status of safety systems and prepared a comprehensive report titled "Safety issues in DAE installations". The report detailed the evaluations and upgradation which are required in the nuclear installations of DAE..... The report is the outcome of stock taking of safety status and aimed at clearly establishing an agreed action plan detailing scope for the required corrective actions and a committed time frame for their implementation by the nuclear installations."

1.43 The Department also informed:

> "The Atomic Energy Commission (AEC) has discussed the report in their meeting held on 19.2.96 and had endorsed the follow up actions prepared and initiated by AERB in this regard. Chairman, AEC, was requested by the Commission to look into the follow up."

1.44 The safety issues raised in the Report have broadly been classified by the Department in 4 categories, which include, hardware related issues leading to replacement of defective components; ageing relating issues; confidence building exercises involving some analytical studies; and upgradation of safety standards in plants that have been built to earlier safety standards.

1.45 On the corrective actions underway in respect of safety issues, the Department has stated: —

> "The time schedules for corrective actions for the issues being accepted by AERB are based on the extent of the work involved and the priority of the issues. Some require short time and some are long range plans. Majority of the actions are likely to be completed within a year. Some relate to development and analysis which may take upto 5 years or so. These

have been identified for finalisation for each action plan. The nuclear installations have already taken some of the required actions."

1.46 On the safety specifications of the nuclear installations, the Department informed:—

"The nuclear power plants adopt what is known as the defence-in-depth concept with respect to safety related systems. As per this concept there are many engineered features which will be activated in the event of failure of any one of the systems.....This is an ongoing activity and in no way endangers the safety of the operating nuclear power plants."

1.47 During evidence, the Committee enquired as to whether the present position of Atomic Energy Regulatory Board (AERB) enables it to function as an autonomous and independent regulatory body. In this regard, Shri S.V. Kumar, Chairman, AERB stated:—

"We have asked ourselves a question whether there has been a technical independence in coming to various decisions. As far as the mandate for that Regulatory Board is concerned, its mandate is to ensure that the safety of the nuclear installations is maintained. If there is an interference, then I think, that is very undesirable situation. Till now we have not encountered any situation where an individual had to change the decision, depending upon the administrative compulsion. That has given the independence."

1.48 The Committee observe that the follow up actions on safety measures in nuclear installations; prepared and initiated by the Atomic Energy Regulatory Board (AERB) have been discussed and endorsed by the Atomic Energy Commission (AEC). The Committee note that undertaking of corrective measures on safety issues is an ongoing activity. As regards the position of Atomic Energy Regulatory Board (AERB) as an independent body, the Chairman, AERB stated that the Board has never faced any interference in fulfilling its mandate of ensuring the maintainence of safety of the nuclear installations. The Committee would, however, like the issue of independent Regulatory Authority to be examined further.

NEW DELHI;
27th August, 1996
5 Bhadra, 1918 (Saka)

JAGMOHAN,
Chairman,
Standing Committee on Energy.

STATEMENT OF CONCLUSIONS/RECOMMENDATIONS OF THE STANDING COMMITTEE ON ENERGY CONTAINED IN THE REPORT

Sl. No.	Reference Para No. Report	Conclusions/Recommendations
1	2	3
1.	1.10	The Committee, in their Ninth and Twenty Third Reports on Demands for Grants of the Department for the years 1994-95 and 1995-96 respectively, had noted with concern that, since the begining of the Plan period the Plan expenditure of the Department had been short of the budgeted amount. It was seen that the shortfall had been due to the inability of the Department to raise internal and extra budgetary resources even though such a target had been envisaged. The Committee had, therefore, stressed on the need of making a realistic budget estimate so as to avoid setbacks to the Plan activities of the Department.
	1.11	From the figures relating to actual mobilisation of IEBR to meet the plan expenditure, the Committee observe that during 1994-95 the mobilisation of funds under IEBR was only Rs. 286.90 crores as against the initially envisaged amount of Rs. 1042.00 crores and during 1995 Rs.476.37 crores as against the initially envisaged amount of Rs. 887.00 crores. The Committee note that the IEBR envisaged to meet the Plan expenditure of the Department has been fixed at unrealistic level. Considering the low operating base of the installed nuclear capacity to generate sufficient internal resources to finance the Plan Programmes, the Committee are of the opinion that it is essential to bring down the estimates of IEBR to realistic levels. The Committee also, therefore, strongly recommend that the Budgetary Support

1	2	3
		to the Department be enhanced to a level which would enable the establishment of a base capacity to generate sufficient internal resources.
2.	1.12	In view of the low operating base of the installed nuclear capacity to generate sufficient resources to support the Programmes of the Department and the gestation period involved in setting up of Nuclear Power Plants, the Committee emphasise that financing Schemes need to be evolved to suit the specific requirements of the Nuclear Power Programme. Considering that setting up of a Nuclear Power Plant takes about eight years, the Committee feel that raising funds through short terms loans for financing the Programmes would not be feasible. The Committee, therefore, stress that the Department should be provided with long terms credit facilities to finance its programmes effectively.
3.	1.23	The Committee observe that in case of the R&D Sector where the Plan outlay is solely by way of Budgetary resources, there have been shortfalls in utilisation of the approved annual plan outlays except during the year 1994-95. The Plan expenditure incurred in case of Variable Energy Cyclotron Centre (VECC) and Atomic Minerals Division (AMD) have been significantly lower than the approved annual outlays for the units. Whereas the shortfall in utilisation of Plan outlays by VECC has been stated to be owing to the difficulties in the procurement of some key equipment, in the case of AMD the shortfall has been attributed to the rephasing of the Power Programme and the consequent slowing down of Uranium mining and milling. The Committee expect that the factors attributing to the shortfall in Plan expenditure would be examined in detail and corrective action undertaken to make realistic estimates for the units in future.

1	2	3
4.	1.24	The Committee note with concern that the shortfall in utilisation of the Eighth Plan outlay for the I&M Sector is likely to be more than Rs. 500 crores. The shortfall in Plan expenditure has been attributed to the rephasing of the Fuel Fabrication facilities of NFC; rephasing of the Uranium mining and milling Project of UCIL; and rephasing of Fuel Cycle facilities of BARC, all of which have been stated to be owing to the scaling down of the Nuclear Power Programme. The shortfall in utilisation of the outlays being noticeable since the very first year of the Plan Period, the Committee fail to understand as to why the factors attributing to the same were not taken into consideration at the stage of formulation of the annual outlays in the subsequent years of the Plan Period. The Committee express the hope that the situation would improve in future.
5.	1.25	On the financial and other implications of the major Projects in Power Sector which would be spilling over to the Ninth Plan Period, the Department has stated that Kaiga units 1&2 and RAPP 3&4 would be spilling over to the Ninth Plan Period. The delay in execution of the Projects has been stated to be mainly due to the I.C. dome delamination incident which occurred at Kaiga-I two years ago. The Committee note that the Kaiga incident has resulted in a hold up in the execution of RAPP 3&4. Considering that the delay in execution of the Projects contributes to cost over runs and also results in a loss to the economy by way of power generation, the Committee express the hope that undertaking of remedial measures would be completed at the earliest. The Committee would like to be apprised of the developments in this regard.
6.	1.29	The Committee observe that there has been a shortfall in the utilisation of Budgetary

1	2	3
		allocations by AMD over the years. The Committee find that during 1995-96, there had been shortfalls in the utilisation of Budgetary outlays as well as in the achievement of targets in respect of some of the principal activities of AMD. The shortfall in meeting the targets for airborne survey is to the extent of nearly fifty percent during the year. The Committee do not find the reasons advanced for the same as convincing. The Committee hope that the reasons for the shortfalls in utilisation of Budgetary allocation as well as the targets envisaged for the activities would be analysed in detail and the performance of AMD improved in future.
7.	1.35	The Committee, in their Twenty Third Report on Demands for Grants (1995-96) had highlighted the disturbing aspect of shortfalls in utilisation of Budgetary allocations by NFC. The Committee observe that the shortfall in utilisation of the outlays by NFC was of the order of Rs. 101 crores during 1993-94, Rs. 82 crores in 1994-95 and Rs. 29 crores during 1995-96. The reasons for the shortfall in utilisation of funds has been attributed to the reduction in the amount sanctioned for the new Projects in NFC and the subsequent efforts to fabricate the required machinery for the Projects indigenously. Manufacturing of the fuel fabricating equipment indigenously has been stated to have brought down the Project costs from Rs. 355 crores to Rs. 215 crores owing to which funds from the approved outlays were surrendered. The Committee, while appreciating the indigenisation efforts which have contributed to bringing down the Project costs, express the hope that efforts would be made to ensure that the variation in the Budgetary estimates and actual expenditure in respect of the units/programmes of NFC which has been of a high order in the

1	2	3
		previous years would be brought down to a minimal level.
8.	1.40	The Committee, in their Ninth and Twenty Third Reports on Demands for Grants for the years 1994-95 and 1995-96, had commented on the poor operating performance of some of the Power Stations. With a view to maintain a consistently good level of performance of the Stations, the Committee stress that corrective measures, required specifically for each unit, as well as those applicable to all the units need to be undertaken on the basis of a time bound programme.
9.	1.48	The Committee observe that the follow up actions on safety measures in nuclear installations, prepared and initiated by the Atomic Energy Regulatory Board (AERB) have been discussed and endorsed by the Atomic Energy Commission (AEC). The Committee note that undertaking of corrective measures on safety issues is an ongoing activity. As regards the position of Atomic Engergy Regulatory Board (AERB) as an independent body, the Chairman, AERB stated that the Board has never faced any interference in fulfilling its mandate of ensuring the maintenance of safety of the nuclear installations. The Committee would, however, like the issue of independent Regulatory Authority to be examined further.

PART II

Minutes of the Third Sitting of Standing Committee on Energy Held on Tuesday, the 13th August, 1996

The Committee sat from 1500 hours to 1745 hours.

PRESENT

Shri Jagmohan — *Chairman*

MEMBERS

2. Prof. (Smt.) Rita Verma
3. Prof. Om Pal Singh Nidar
4. Shri Muni Lal
5. Shri Manoj Kumar Sinha
6. Shri Tariq Anwar
7. Shri Prithviraj D. Chavan
8. Shri Sandipan Thorat
9. Shri Ram Kirpal Yadav
10. Shri Anil Basu
11. Shri Haradhan Roy
12. Shri Anand Mohan
13. Shri Ramendra Kumar
14. Shri Ramjilal
15. Shri Vedprakash Goyal
16. Shri Lakhiram Agarwal
17. Shri Prem Chand Gupta
18. Shri Dipankar Mukherjee

SECRETARIAT

1.	Shri G.R. Juneja	—	*Deputy Secretary*
2.	Shri A.S. Chera	—	*Under Secretary*

Witnesses

Department of Atomic Energy

1. Shri Y.S.R. Prasad, Member, AEC and Managing Director, NPC.
2. Shri Anil Kakodkar, Member, AEC and Director, BARC.
3. Shri S.V. Kumar, Chairman, AERB.
4. Shri C.R. Kamalanathan, Additional Secretary.
5. Shri K.K. Sinha, Chief Executive, NFC.
6. Dr. P. Rodriguez, Director, IGCAR.
7. Shri A. Das Gupta, Joint Secretary.
8. Shri Rahul Sarin, Joint Secretary.
9. Shri D.D. Bhawalkar, Director, CAT.
10. Mrs. Ray Chaudhary, Director (Finance), I.R.E
11. Shri K.B.S. Chopra, Chief Controller of Accounts.
12. Shri J.L. Bhasin, Managing Director, UCIL.
13. Shri K.K. Dwivedy, Director, AMD.
14. Shri V.K.S. Nair, Budget & Planning Officer.,

The Committee took oral evidence of the representatives of Department of Atomic Energy in connection with examination of Demands for Grants (1996-97) of Department of Atomic Energy.

The important points discussed by the Committee were:

(i) Power Generation Programme.

(ii) R&D activities.

(iii) Budgetary constraints of the Department.

(iv) Programmes of Nuclear Fuel Complex.

(v) Operating Performance of Nuclear Power Stations.

(vi) Regulatory aspects of safety.

3. A copy of the verbatim proceedings of the Committee was kept on record.

The Committee then adjourned.

Extracts of Minutes of the Sixth Sitting of Standing Committee on Energy Held on 21st August, 1996

The Committee sat from 1100 hours to 1300 hours.

PRESENT

Shri Jagmohan — *Chairman*

MEMBERS

2. Prof. (Smt.) Rita Verma
3. Prof. Om Pal Singh Nidar
4. Shri Ravindra Kumar Pandey
5. Shri Muni Lal
6. Shri Sriram Chauhan
7. Shri Sriballav Panigrahi
8. Shri G. Venkatswamy
9. Shri Tariq Anwar
10. Shri Parasram Bhardwaj
11. Shri Prithviraj D. Chavan
12. Shri Iswar Prasanna Hazarika
13. Shri Sandipan Thorat
14. Shri Anil Basu
15. Shri Haradhan Roy
16. Shri P.R.S. Venkatesan
17. Shri N. Ramakrishna Reddy
18. Shri Anand Mohan
19. Shri Chitta Basu
20. Shri Ramendra Kumar
21. Shri Madhavsinh Solanki
22. Shri M. Rajasekara Murthy
23. Shri Ramjilal
24. Shri Vedprakash Goyal
25. Shri Lakhiram Agarwal
26. Shri Prem Chand Gupta
27. Shri V.P. Duraisamy

SECRETARIAT

1.	Shri G.R. Juneja	—	*Deputy Secretary*
2.	Shri A.S. Chera	—	*Under Secretary*

1. ** ** **

2. The Committe then considered and adopted the Draft Report on Demands for Grants (1996-97) of Department of Atomic Energy with the modifications indicated in Annexure-II.

3. The Committee authorised the Chairman to finalise the reports adopted by the Committee and present them to Parliament.

The Committee then adjourned

** Para 1. of the Minutes releting to consideration of Draft Report on Demands for Grants of Ministry of Non-Conventional Energy sources is not included.

Modifications in the Report on Demands for Grants (1996-97) of Department of Atomic Energy.

1. Modify Para 1.10 :

Existing Para :

The Committee, in their Ninth and Twenty Third Reports on Demands for Grants of the Department for the years 1994-95 and 1995-96 respectively, noted with concern that in successive years, the plan expenditure of the Deparment has been well short of the budgeted amount. The shortfall had been due to the inability of the Department to raise internal and extra budgetary resources as envisaged. The Committee had stressed on making realistic budget estimates so as to avoid setback to the Plan activities of the Department.

Modified Para:

The Committee, in their Ninth and Twenty Third Reports on Demands for Grants of the Department for the years 1994-95 and 1995-96 respectively, had noted with concern that since the beginning of the Plan period the plan expenditure of the Department had been short of the budgeted amount. It was seen that the shortfall had been due to the inability of the Department to raise internal and extra budgetary resources even though such a target had been envisaged. The Committee had, therefore, stressed on the need of making a realistic budget estimate so as to avoid setbacks to the Plan activities of the Department.

2. Modify the last two sentences in para 1.11 :

Existing sentences:

Considering the low operating base of the installed nuclear capacity to generate sufficient internal resources to finance the Plan Programmes, the Committee feel it essential that the estimates of IEBR are brought down to realistic levels. And, the Committee strongly recommend that the Budgetary Support to the department be enhanced to a level which could enable the establishment of base capacity to generate sufficient internal resources.

Modified sentences :

Considering the low operating base of the installed nuclear capacity to generate sufficient internal resources to finance the Plan Programmes, the

Committee are of the opinion that it is essential to bring down the estimates of IEBR to realistic levels. The Committee also strongly recommend that the Budgetary Support to the Department be enhanced to a level which would enable the establishment of a base capacity to generate sufficient internal resources.

3. Modify the 2nd and 3rd sentences in para 1.29 :

Existing sentences :

The Committee find that during 1995-96, there had been shortfalls in the utilisation of Budgetary outlays as well as the targets in respect of some of the principal activities of AMD. The shortfall in meeting the targets for airborne survey being to the extent of nearly fifty percent during the year, the Committee find the reasons advanced for the same not very convincing.

Modified sentences:

The Committee find that during 1995-96, there had been shortfalls in the utilisation of budgetary outlays as well as in the achievement of targets in respect of some of the principal activities of AMD. The shortfall in meeting the targets for airborne survey is to the extent of nearly fifty percent during the year. The Committee do not find the reasons advanced for the same as convincing.

4. Delete part of the sentence in para 1.48 beginning from **"and in no way endangers the safety of the operating nuclear plants".**

5. Modify the last sentence in para 1.48 :

Existing sentence :

The Committee would, however, like to be apprised of the changes, if any, contemplated in the organisational set up of AERB as also the progress of the corrective actions in respect of safety issues relating to nuclear installations.

Modified sentence:

The Committee would, however, like the issue of independent Regulatory Authority to be examined further.